General

Guideline Title

Shoulder conditions diagnosis and treatment guideline.

Bibliographic Source(s)

Washington State Department of Labor and Industries. Shoulder conditions diagnosis and treatment guideline. Olympia (WA): Washington State Department of Labor and Industries; 2013. 28 p. [72 references]

Guideline Status

This is the current release of the guideline.

Regulatory Alert

FDA Warning/Regulatory Alert

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- December 14, 2016 – General anesthetic and sedation drugs : The U.S. Food and Drug Administration (FDA) is warning that repeated or lengthy use of general anesthetic and sedation drugs during surgeries or procedures in children younger than 3 years or in pregnant women during their third trimester may affect the development of children's brains. Consistent with animal studies, recent human studies suggest that a single, relatively short exposure to general anesthetic and sedation drugs in infants or toddlers is unlikely to have negative effects on behavior or learning. However, further research is needed to fully characterize how early life anesthetic exposure affects children's brain development.

Recommendations

Major Recommendations

Criteria for Shoulder Surgery

A request may be appropriate for	If the patient has	AND the diagnosis is supported by these clinical findings:			AND this has been done (if recommended)

Surgical Procedure A request may be appropriate for	Diagnosis If the patient has	Subjective AND the diagnosis is supported by these clinical findings:	Objective	Imaging	Non-operative Care AND this has been done (if recommended)
Rotator cuff tear repair Note: The use of allografts and xenografts in rotator cuff tear repair is not covered. Note: Distal clavicle resection as a routine part of acute rotator cuff tear repair is not covered.	Acute full-thickness rotator cuff tear	Report of an acute traumatic injury within 3 months of seeking care AND Shoulder pain: With movement and/or at night	Patient will usually have weakness with one or more of the following: • Forward elevation • Internal/external rotation • Abduction testing	Conventional x-rays, AP, and true lateral or axillary view AND MRI, ultrasound, or x-ray arthrogram reveals a full thickness rotator cuff tear Routine use of contrast imaging is not indicated	May be offered but not required
Rotator cuff tear repair	Partial thickness rotator cuff tear	Pain with active arc motion 90°–130°	Weak or painful abduction AND Tenderness over rotator cuff AND Positive impingement sign	Conventional x-rays, AP, and true lateral or axillary view AND MRI, ultrasound, or x-ray arthrogram shows a partial thickness rotator cuff tear Routine use of contrast imaging is not indicated	Conservative care* required for at least 6 weeks, then: If tear is >50% of the tendon thickness, may consider surgery; If <50% thickness, do 6 more weeks conservative care
Rotator cuff tear repair Note: The use of allografts and xenografts in rotator cuff tear repair is not covered.	Chronic or degenerative full-thickness rotator cuff tear	Gradual onset of shoulder pain without a traumatic event OR Minor trauma; night pain	Patient will usually have weakness with one or more of the following: • Forward elevation • Internal/external rotation • Abduction testing	Conventional x-rays, AP, and true lateral or axillary view AND MRI, ultrasound, or x-ray arthrogram reveals a full thickness rotator cuff tear Routine use of contrast imaging is not indicated	Conservative care*, for at least 6 weeks If no improvement after 6 weeks, and tear is repairable, surgery may be considered
Rotator cuff tear repair after previous rotator cuff surgery 1. One revision surgery may be considered Revision surgery is not covered in the presence of a massive rotator cuff tear, as defined by one or more of the following: a. >3 cm of retraction b. Severe	Recurring full thickness tear	1. New traumatic injury with good function prior to injury	Patient may have weakness with forward elevation, internal/external rotation, and/or abduction testing	Conventional x-rays, AP, and true lateral or axillary view AND MRI, ultrasound, or x-ray arthrogram reveals a full thickness rotator cuff tear Routine use of contrast imaging is not indicated	Conservative care*, for at least 6 weeks If no improvement after 6 weeks, and tear is repairable, surgery may be considered
	Note: Smoking/nicotine use is a strong relative contraindication for rotator cuff surgery				

A request may be appropriate for	If the patient has	AND the diagnosis is supported by these clinical findings:			AND this has been done (if recommended)
rotator cuff muscle atrophy c. Severe fatty infiltration					
2. 2nd and subsequent revisions Revision surgery is not covered in the presence of a massive rotator cuff tear, as defined by one or more of the following: a. >3cm of retraction b. Severe rotator cuff muscle atrophy c. Severe fatty infiltration	Recurring full thickness tear	2. No new injury, but gradual onset of pain with good function for over a year after previous surgery 2nd revision will only be considered when patient has returned to work or has clinically meaningful improvement in function, on validated instrument, after the most recent surgery	Patient may have weakness with forward elevation, internal/external rotation, and/or abduction testing	Conventional x-rays, AP, and true lateral or axillary view AND MRI, ultrasound, or x-ray arthrogram reveals a full thickness rotator cuff tear Routine use of contrast imaging is not indicated	Second revision: Conservative care* for 6 weeks is required; if no improvement, surgery may be considered
Partial claviculectomy (includes Mumford procedure) Not authorized as a part of acute rotator cuff repair Note: Mumford procedure done alone must meet all these criteria. Mumford as an add-on to any other shoulder surgery must also meet all diagnostic criteria preoperatively. Intraoperative visualization of AC joint, in the absence of radiographic findings, is not a sufficient finding to authorize the claviculectomy.	Arthritis of AC joint	Pain at AC joint; aggravation of pain with shoulder motion	Tenderness over the AC joint AND Documented pain relief with an anesthetic injection	MRI (radiologist interpretation) reveals: • Moderate to severe degenerative joint disease of AC joint, or • Distal clavicle edema, or • Osteolysis of distal clavicle OR Bone scan is positive OR Radiologist's interpretation of x-ray reveals moderate to severe AC joint arthritis	Conservative care* for at least 6 weeks (if done in isolation) Surgery is not indicated before 6 weeks
Isolated subacromial decompression with or without acromioplasty	Subacromial impingement syndrome	Generalized shoulder pain	Pain with active elevation	MRI reveals evidence of tendinopathy/tendinitis OR A rotator cuff tear	12 weeks of conservative care* AND Subacromial injection with local anesthetic

A request may be appropriate for	If the patient has	AND the diagnosis is supported by these clinical findings:			AND this has been done (if recommended)
Debridement of calcific tendinitis	Calcific tendinitis	Generalized shoulder pain	Pain with active elevation	Conventional x-rays show calcium deposit in the rotator cuff	12 weeks of conservative care*
Open treatment of acute acromioclavicular dislocation Note: Surgery for acute types I and II AC joint dislocations is not covered.	Shoulder AC joint separation	Pain with marked functional difficulty	Marked deformity	Conventional x-rays show type III or greater separation	Conservative care* only for types I and II Conservative care for 3 months for type III separations, with the exception of early surgery being considered for heavy or overhead laborers Immediate surgical intervention for types IV–VI
Repair, debridement, or biceps tenodesis for labral lesion, including SLAP tears	Labral tears without instability (including SLAP tears)	Traumatic event reported or an occupation with significant overhead activity AND Pain worse with motion and active elevation	Pain reproduced with labral loading tests (e.g., O'Brien's test)	MRI shows labral tear	At least 6 weeks of conservative care*
Capsulorrhaphy (Bankart procedure)	Glenohumeral instability	History of a dislocation that inhibit activities of daily living	Positive apprehension/relocation test	Conventional x-rays AND MRI demonstrates one of the following: a. Bankart/labral lesion b. Hill Sachs lesion c. Capsular tear	If only one dislocation has occurred, recommend 1–2 weeks of immobilization then PT for 6–8 weeks. If a positive apprehension is present at 6 weeks, surgery may be considered Two or more dislocations in 3 months may proceed to surgery without conservative care Early surgery may be

A request may be appropriate for	If the patient has	AND the diagnosis is supported by these clinical findings:			AND this has been done (if recommended)
					considered in patients with large bone defects, or in patients under 35 years old
Tenodesis or tenotomy of long head of biceps	Partial biceps tear, biceps instability from the biceps groove, proximal biceps enlargement that inhibits gliding in the biceps groove, complete tear of the proximal biceps tendon	Anterior shoulder pain, weakness and deformity	Tenderness over the biceps groove, pain in the anterior shoulder during resisted supination of the forearm Partial thickness tears do not have the classical appearance of ruptured muscle	MRI required if procedure performed in isolation. If biceps tendon pathology identified and addressed during separate procedure the code may be added retroactively	Surgery almost never considered in full thickness ruptures
Total/hemi shoulder arthroplasty	Severe proximal humerus fracture with: post traumatic arthritis, post traumatic avascular necrosis OR Comminuted fractures of proximal humerus	Pain with ROM, history of work related fracture	Pain/crepitance with ROM, decreased ROM	Conventional x-rays show moderate to severe glenohumeral arthritis OR Avascular necrosis OR Comminuted fractures of proximal humerus	Conservative care* may be offered but not required
Reverse total shoulder arthroplasty	Rotator cuff arthropathy OR Severe proximal humerus fractures	Pain, weakness AND History of work related rotator cuff tear	Inability to elevate arm, pain with ROM	Conventional x-rays show moderate to severe glenohumeral arthritis and a high riding humeral head	Conservative care* may be offered but not required
Manipulation under anesthesia/arthroscopic capsular release	Idiopathic adhesive capsulitis, postoperative adhesive capsulitis	Pain, loss of motion	Loss of passive motion	Conventional x-rays do not show bone pathology that can explain the loss of motion	12 weeks of conservative care*
Diagnostic arthroscopy	Arthroscopy for diagnostic purposes	**Diagnostic arthroscopy is not covered.**			

*Conservative care should include at least active assisted range of motion and home-based exercises.

Abbreviations: AC, acromioclavicular; AP, anteroposterior; MRI, magnetic resonance imaging; PT, physical therapy; ROM, range of motion; SLAP, superior labral tear from anterior to posterior

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Acute and chronic work-related shoulder dysfunctions

Guideline Category

Diagnosis

Evaluation

Management

Rehabilitation

Treatment

Clinical Specialty

Anesthesiology

Emergency Medicine

Family Practice

Geriatrics

Internal Medicine

Nursing

Orthopedic Surgery

Physical Medicine and Rehabilitation

Sports Medicine

Surgery

Intended Users

Advanced Practice Nurses

Chiropractors

Health Care Providers

Health Plans

Managed Care Organizations

Nurses

Physical Therapists

Physician Assistants

Utilization Management

Guideline Objective(s)

- To provide a tool for utilization review staff to appropriately authorize shoulder surgery for injured workers, and to guide health care providers in the appropriate and allowable treatment for shoulder injuries for injured workers covered by the Washington State workers' compensation system
- To serve as an educational resource for health care providers who treat injured workers in the Washington workers' compensation system under Title 51 Revised Code of Washington (RCW) and as review criteria for the department's utilization review team to help ensure treatment of shoulder injuries is of the highest quality
- To provide standards that ensure a uniformly high quality of care for injured workers in Washington State

Target Population

Injured workers with acute and chronic shoulder dysfunctions

Interventions and Practices Considered

Diagnosis/Evaluation

1. History and clinical exam, including tests such as labral loading test and apprehension/relocation test
2. Diagnostic imaging

Treatment/Management/Rehabilitation

1. Conservative treatment
    - Non-steroidal anti-inflammatory drug (NSAID) medications and acetaminophen
    - Brief rest and immobilization (less than 4 days)
    - Unloaded movement and manual interventions
    - Therapeutic exercise and mobilization
    - Strengthening exercise
    - Corticosteroid injections
    - Ergonomic interventions
2. Surgical treatment
    - Rotator cuff repair
    - Revision rotator cuff repair
    - Partial claviculectomy (includes Mumford procedure)
    - Isolated subacromial decompression with or without acromioplasty
    - Debridement of calcific tendinitis
    - Open treatment of acute acromioclavicular dislocation
    - Repair, debridement, or biceps tenodesis for labral lesion, including superior labral tear from anterior to posterior (SLAP) tears
    - Capsulorrhaphy (Bankart procedure)
    - Tenodesis or tenotomy of long head of biceps
    - Total/hemi shoulder arthroplasty
    - Reverse total shoulder arthroplasty
    - Manipulation under anesthesia/arthroscopic capsular release

Note: Diagnostic arthroscopy is not currently accepted as a viable treatment option. The following treatments were considered but are not authorized: allografts or xenografts in rotator cuff tear repair; distal clavicle excision as a routine part of rotator cuff repair.

Major Outcomes Considered

- Functional improvement of shoulder
- Pain relief
- Return to work
- Recurrent instability rate

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

The bulk of the literature search and review was conducted from November 2012 to March 2013. Additional searches were conducted as requested by the Industrial Insurance Medical Advisory Committee Subcommittee members. Search results were limited to human adults only and English only and in some cases filtered to studies published in the last 10 years.

PubMed was the main database searched for peer-reviewed articles. The following keywords were used in PubMed: *shoulder surgery and workers compensation, rotator cuff tear repair and workers compensation, rotator cuff tear repair, acromioclavicular dislocation treatment, long head of the biceps, tenodesis of biceps, diagnostic arthroscopy, bankart repair, clavicular fractures, recurrent dislocation treatment, subacromial decompression and rotator cuff repair, SLAP tear repair, partial rotator cuff tear repair and treatment, shoulder injury and imaging, rotator cuff tears and imaging, SLAP tears and imaging, shoulder injury and work relatedness, conservative treatment and shoulder injury*.

Additional citation tracking was also performed by department staff for potentially relevant studies not initially retrieved from the electronic database.

Number of Source Documents

319 abstracts were reviewed, 129 full texts reviewed and 71 cited in this guideline.

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus (Committee)

Weighting According to a Rating Scheme (Scheme Not Given)

Rating Scheme for the Strength of the Evidence

The quality and strength of the evidence were assessed using the American Academy of Neurology (AAN) clinical guideline process manual rating scheme. Refer to the AAN Clinical Practice Guideline Process Manual, https://www.aan.com/Guidelines/Home/Development .

Methods Used to Analyze the Evidence

Systematic Review

Description of the Methods Used to Analyze the Evidence

A systematic review and summary of the relevant peer reviewed medical literature is done and is presented to the subcommittee for their review. Claim and billing data from Labor & Industries may also be reviewed.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

The process for guideline development is contained in a separate document, titled Medical Treatment Guidelines in Washington Workers' Compensation, June 2010 (see the "Availability of Companion Documents" field). The process can be summarized as follows:

1. A subcommittee of the Industrial Insurance Medical Advisory Committee (IIMAC) was formed with practicing health care providers, including physicians, a physical therapist, and professional utilization review staff. The subcommittee met 5 times between February and October 2013.
2. A systematic review and summary of the relevant peer-reviewed medical literature was done and presented to the subcommittee for their review. Claim and billing data from Labor and Industries were also reviewed.
3. Drafts of the guideline were formulated and reviewed and modified by the subcommittee members.

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

- After the full advisory committee has given their input and any recommended changes are made, the third draft guideline is posted on the web and distributed via a provider listserv for public review and comment.
- Once all public comments are received and reviewed, responses are provided by the subcommittee. Both comments and responses are posted on the web.
- The subcommittee may make further revisions to the draft guideline based on public input and any other information they have received. This then results in a fourth draft.
- The fourth draft is presented to the full advisory committee in an open public meeting. Oral comments are invited from the public, and the full committee may recommend further changes, potentially creating a fifth and final draft.
- Once the full committee makes the advisory recommendation to adopt the guideline, it becomes final and is again posted on the web and distributed via the provider listserv.
- Labor & Industries (L&I) then posts on the web a Provider Bulletin announcing the new or revised guideline and distributes it via the provider listserv.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

This guideline was based on the weight of the best available clinical and scientific evidence from a systematic review of the literature and on a consensus of expert opinion.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

- Appropriate authorization of shoulder surgeries by the utilization review team and claim adjudicators, leading to better outcomes for workers with shoulder injuries
- One anticipated benefit is decreasing surgical procedures that are unnecessary to the health of the worker, such as distal claviculectomies routinely done with rotator cuff repairs. The diagnostic criteria will help ensure that surgery is performed when there is clear evidence that it will be of benefit.

Potential Harms

Care must be exercised when giving a corticosteroid injection to a partial rotator cuff tear, as this may lead to tear extension. Because corticosteroid use is associated with side effects such as weakening of connective tissue, no more than 3 injections are recommended under one claim for the shoulder, 4 injections per lifetime.

Contraindications

Contraindications

- Smoking/nicotine use is a strong relative contraindication for rotator cuff surgery.
- Revision rotator cuff surgery should not be done if a patient has a massive rotator cuff tear (i.e., tears >3 cm or with severe fatty infiltration).

Qualifying Statements

Qualifying Statements

In order for a shoulder condition to be allowed as an occupational disease, the provider must document that the work exposures created a risk of contracting or worsening the condition relative to the risks in everyday life, on a more-probable-than-not basis.

Implementation of the Guideline

Description of Implementation Strategy

Most guidelines are implemented within the utilization review (UR) program. Labor and Industries (L&I) guidelines have priority over other proprietary guidelines and criteria that may exist. Where L&I guidelines are not available, proprietary ones may be used. Reviewers apply each guideline as a standard for the majority of requests in the Washington workers' compensation program. For the minority of workers who appear to fall outside of the guideline and whose complexity of clinical findings exceeds the specificity of the guideline, further review by a physician is conducted.

When a surgical procedure is requested for a patient who meets the guideline criteria, the reviewer will recommend approval to the claim manager. If the criteria are not met, the request will be referred to a physician consultant who will review the patient's file, offer to discuss the case with the requesting physician, and make a recommendation to the claim manager. The flexibility built into this decision making process is important in two ways. First, it enables the Washington State Industrial Insurance Medical Advisory Committee (IIMAC) to develop surgical indications fairly quickly. Second, it plays a major role in legitimizing the work of the subcommittee in the eyes of practicing physicians in Washington.

Completed guidelines will be communicated to practicing physicians via L&I's website and through its provider listserv (http://www.lni.wa.gov/Main/Listservs/Provider.asp). Education and training will be provided to reviewers and staff to ensure their proper application within the UR program. Where possible, continuing medical education (CME) credits may be offered.

Implementation Tools

Chart Documentation/Checklists/Forms

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

Staying Healthy

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

Washington State Department of Labor and Industries. Shoulder conditions diagnosis and treatment guideline. Olympia (WA): Washington State Department of Labor and Industries; 2013. 28 p. [72 references]

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2013

Guideline Developer(s)

Washington State Department of Labor and Industries - State/Local Government Agency [U.S.]

Source(s) of Funding

Washington State Department of Labor and Industries

Guideline Committee

Labor and Industries' Industrial Insurance Medical Advisory Committee (IIMAC), Subcommittee on Shoulder Conditions

Composition of Group That Authored the Guideline

Industrial Insurance Medical Advisory Committee (IIMAC) Committee Members: Andrew Friedman, MD; Chris Howe, MD (*Chair*); Gerald Yorioka, MD; Karen Nilson, MD; Kirk Harmon, MD

Subcommittee Clinical Experts: Michael Codsi, MD; Eric Fletcher, PT; Laura Rachel Kaufman, MD

Consultants: Ken O'Bara, MD, Qualis Health; Shari Fowler-Koorn, RN, Qualis Health; Mike Dowling, DC

Department Staff: Gary M. Franklin, MD, MPH, Medical Director; Lee Glass, MD, Associate Medical Director; Hal Stockbridge, MD, MPH, Associate Medical Director; Robert Mootz, DC, Associate Medical Director; Teresa Cooper, MN, MPH, Occupational Nurse Consultant; Bintu Marong, MS, Epidemiologist

Financial Disclosures/Conflicts of Interest

The Washington State Department of Labor and Industries is a public state agency and did not receive any outside funding and has no conflicts of interest to report. Committee members reported no conflicts of interest, and their signed statements are kept on file.

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available in Portable Document Format (PDF) from the Washington State Department of Labor and Industries Web site .

Availability of Companion Documents

The following is available:

- Medical treatment guidelines for Washington Workers' Compensation. Guideline process. Olympia (WA): Washington State Department of Labor and Industries. 2010 Jun. 4 p. Electronic copies: Available in Portable Document Format (PDF) from the Washington State Department of Labor and Industries Web site .

In addition, a Simple Shoulder Test and Shoulder Pain and Disability Index (SPADI) are provided in the original guideline document .

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on May 22, 2014. This summary was updated by ECRI Institute on September 18, 2015 following the U.S. Food and Drug Administration advisory on non-aspirin nonsteroidal anti-inflammatory drugs (NSAIDs). This summary was updated by ECRI Institute on February 15, 2017 following the U.S. Food and Drug Administration advisory on general anesthetic and sedation drugs.

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